

INCH-POUND

MIL-DTL-16878/38A
11 August 2000
SUPERSEDING
MIL-W-16878/38(NAVY)
11 September 1992

DETAIL SPECIFICATION SHEET

WIRE, ELECTRICAL,
ETHYLENE-PROPYLENE DIENE ELASTOMER (EPDM) INSULATED,
125 °C, 5000 VOLTS, EXTRUDED INSULATION

This specification is approved for use by all Departments
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-16878G.

REQUIREMENTS.

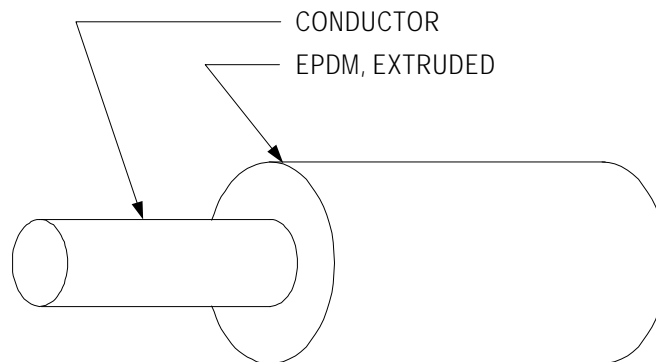
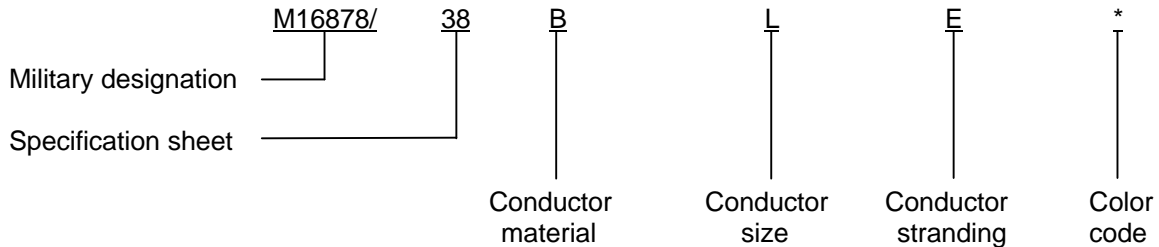


FIGURE 1. Wire configuration.

TABLE I. Wire configuration and dimensions.

PIN ^{1/}	Wire size	Stranding	Conductor		Conductor diameter (nominal) (inch)	Finished wire diameter (inch)	
			Material	Coating		Min	Max
M16878/38BHE*	18	19 X 30	Copper	Tin	.049	.090	.110
M16878/38BJE*	16	19 X 29	Copper	Tin	.056	.097	.112
M16878/38BKE*	14	19X 27	Copper	Tin	.069	.122	.127
M16878/38BLE*	12	19 X 25	Copper	Tin	.088	.130	.145
M16878/38BMG*	10	37 X 26	Copper	Tin	.111	.156	.170

Notes:

^{1/} PIN stands for part or identifying number (see figure 2).FIGURE 2. Example of PIN (see MIL-DTL-16878G).

Operating voltage: Up to 5000 volts
 Operating temperature: Up to 125 °C
 Insulation: Extruded ethylene-propylene diene elastomer (EPDM)
 Spark test voltage: 11 kV
 Impulse dielectric test voltage: 15 kV, or 10.6 kV using the 3.0 kHz spark test
 Dielectric withstanding voltage: 7.5 kV
 Insulation resistance: $IR = K \log_{10} D/d$

Where: IR = Minimum insulation resistance in megohms per 1000 feet at 20 °C

K = 1,500

D = Maximum average diameter of finished wire

d = Conductor diameter

Cold bend:

Condition 4 hours at -25±1 °C (see table II)

TABLE II. Cold bend mandrel sizes.

Wire size	Cold bend mandrel diameter (inches, maximum)
18 through 10	1

Surface resistance:

Not required

Heat resistance:

Condition at 150 °C

Heat aging:

Not required

Insulation tensile strength:

1500 pounds force per square inch (minimum)

Insulation elongation: 250 percent (minimum)

CHANGES FROM PREVIOUS ISSUE. Marginal notations are not used in this revision to identify changes with respect to the previous issue because of the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:
Navy - SH
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC
(Project 6145-2193-021)

Review activity:
Navy - AS